

Anemia Testing in Men: indications from the silently vulnerable?

For several decades, in resource poor countries, public health efforts directed towards the understanding and control of anemia have focused on women, children. Very little is known about the etiology of anemia in adult males between and 15-59 in Africa and Asia. In 2006, the demographic health surveys (DHS) conducted anemia testing in men resulting in the first population based prevalence estimates in resource poor countries in Africa and Asia. Reported male anemia rates in India, Mali and Uganda have all been greater than 10%(1). Given the lack of information on anemia in men, it is not immediately evident what these data indicate and how they can inform public health actions to prevent or treat anemia. Anemia has a complex etiology that includes nutritional deficiency; infectious diseases such as malaria and hookworm infections and genetic red blood cell disorders. Worldwide, iron deficiency is the most common cause of anemia (2). As important economic and social contributors to household the health status of men can directly impact household well-being. DHS data on anemia levels in men provide an opportunity to include men in public health efforts by beginning to characterize anemia in men and its associated risk factors.

Objective

The objective of this analysis is to provide the first steps towards understanding the risk factors associated with anemia in men.

Methods

This analysis will be conducted using DHS survey data 2006 collected according to standard DHS procedures.¹ Over 69,000 men were tested for anemia during the DHS and 24.7% were found to have some level of anemia. For this analysis, a sub-sample of non-smoking, men age 15 to 54 with valid hemoglobin measurements were selected from this data set. Bivariate analyses and logistic regression will be used to identify risk factors associated with anemia. Further, the

¹ For a full description of methods used refer to www.measuredhs.com .

male hemoglobin distribution will be compared to a reference standard (data from the Third National Health Examination Survey) to further investigate the etiology of anemia in men.

Preliminary Results

The sample used for this analysis was comprised of 24624 non-smoking, non-drinking men between the age of 15 and 54 years with a mean age of 27.1 ± 10.9 years. Mean hemoglobin was 140.7 ± 17.8 g/L. Twenty-three percent of the men had some form of anemia. Most of the anemia was mild (12.6%), and only 1.2% of the sample had severe anemia. Anemia prevalence was highest in the youngest men 15-19 (30%), began decreasing between 20 to 34 years and began to increase between 35 years (22%) and 54 (28%). A greater percentage of men (27%) living in rural areas were anemic compared to urban areas (17%) ($p=0.000$). Anemia prevalence significantly decreased ($p=0.0000$) with increased education level (35% of men with no education were anemic compared to 22% of those with some education). Anemia prevalence decreased across economic groups (from poorest to the richest) however, 15% of men in the highest wealth quintile were still anemic. Based on logistic regression, the odds of developing anemia increased with age, place of residence, number of household members, with increased wealth and with intake of milk/curds and fruit.

Expected Findings:

The hemoglobin distribution will differ from the reference distribution in that it will be shifted to the left with a larger standard deviation.

Preliminary conclusions:

The problem of anemia in men exists in some resource poor countries. Similar trends were found with anemia in men that have been previously found with designated vulnerable groups. As an integral part of the family unit, global efforts to understand and control anemia should include adult men.

References

1. International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: India: Volume I. Mumbai: IIPS.
2. Stoltzfus RJ, Mullany L, Black RE. Iron Deficiency Anemia. In: Ezzati, M, Lopez, AD, Rodgers, A and Murray, CJL, eds. In Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors. Geneva: World Health Organization, 2004.